AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (original) A method for encoding digital data comprising:

partitioning the digital data into a plurality of blocks;

extracting signature information from a first one of said blocks;

selecting a second one of said blocks as a masking block;

embedding said signature information of said first block in said masking block.

2. (original) The method of claim 1 further comprising repeating said extracting, selecting and embedding steps for each of said plurality of blocks.

3. (original) The method of claim 1 further comprising repeating said extracting, selecting and embedding steps for each of said plurality of blocks such that each of said plurality of blocks serves as a masking block for one and only one other block.

4. (original) The method of claim 1 wherein said selecting step is performed by scanning said plurality of blocks using a predefined scanning pattern.

5. (original) The method of claim 4 further comprising expressing said plurality of blocks in a predetermined column and row format and wherein said scanning pattern traverses a diagonal zig-zag pattern across said column and row format.

6. (original) The method of claim 1 wherein said extracted signature information is content-associative signature information.

7. (original) The method of claim 1 wherein said extracted signature information is generated by expressing said data in the frequency domain having corresponding frequency coefficients and by using a selected portion of said frequency coefficients to generate said signature information.

8. (original) The method of claim 1 wherein said embedding step is performed so as to minimize the perceptibility of said signature information within said masking block.

9. (original) The method of claim 1 wherein said embedding step is performed using a data hiding technique in which the least significant bits of the masking block are altered based on the signature information.

10. (original) The method of claim 1 wherein said step of selecting a masking block is performed by expressing said plurality of blocks geometrically and by maximizing the distance between said first and second blocks.

11. (original) The method of claim 1 wherein said step of selecting a masking block is performed using a circular selection strategy whereby said first block both provides signature information to and receives signature information from a linked list of blocks containing at least one third block.

12. (original) The method of claim 1 wherein said step of selecting a masking block is performed using a random selection strategy whereby said first block and said second block are selected by a random shuffle algorithm.

13. (original) The method of claim 1 wherein said embedding step is performed using a nonlinear embedding strategy whereby the amount of signature information stored in a given block is controlled based on the data content of that block.

14. (original) The method of claim 1 wherein said embedding step is performed using a nonlinear embedding strategy whereby said plurality of blocks are classified according to a predetermined set of block types and wherein the amount of signature information stored in a given block is controlled based on the given block's block type.

15. (currently amended) A method of performing data reconstruction ~~upon data encoded according to claim 1~~, comprising:

accessing processor memory containing digital data that has been encoded by:

(a) partitioning the digital data into a plurality of blocks;

(b) extracting signature information from a first one of said blocks;

(c) selecting a second one of said blocks as a masking block; and

(d) embedding said signature information of said first block in said masking block;

examining said one of said blocks to detect if an error condition exists in that block;

upon detection of an error condition, accessing said second block to retrieve the signature information of said first block; and

using said retrieved signature information to make repairs to said first block.

16. (original) The method of claim 15 further comprising identifying additional blocks in a neighborhood associated with said first block and using said additional blocks along with said retrieved signature information to make repairs to said first block.

17. (original) The method of claim 16 wherein a multidirectional interpolation process is performed on said additional blocks to make repairs to said first block.

18. (previously presented) The method of claim 1 further comprising:

identifying additional blocks in a neighborhood associated with said first block;

extracting edge signature information from said additional blocks; and

using said extracted edge information in generating said signature information.

19. (original) A system for encoding digital data comprising:

a memory for partitioning said digital data into a plurality of blocks including a first block and a second block;

a processor for extracting signature information from a first one of said blocks and embedding said signature information in said second block.

20. (original) The system of claim 19 wherein said processor employs a data hiding algorithm to embed said signature information into said second block.

21. (original) The system of claim 19 wherein said memory stores said digital data expressed in the frequency domain with corresponding frequency coefficients and wherein said data processor includes an extraction algorithm that uses a selected portion of said frequency coefficients to generate said signature information.

22. (previously presented) The system of claim 1 wherein a memory expresses said plurality of blocks geometrically and said processor accesses said memory to define said first and second blocks such that the distance between said first and second blocks is maximized.

23. (previously presented) The system of claim 1 wherein a processor accesses said memory to define said first and second blocks in a circular strategy whereby said first block both provides signature information to and receives signature information from a linked list of blocks containing at least one third block all defined in said memory.

24. (currently amended) A system for performing data reconstruction ~~upon data encoded according to claim 1~~, comprising:

processor memory containing digital data that has been encoded by:

(a) partitioning the digital data into a plurality of blocks;

(b) extracting signature information from a first one of said blocks;

(c) selecting a second one of said blocks as a masking block; and

(d) embedding said signature information of said first block in said masking block;

a processor for examining said one of said blocks to detect if an error condition exists in that block;

said processor having an algorithm that causes said processor to access said second block to retrieve the signature information of said first block and to make repairs to said first block using said retrieved signature information.

25. (previously presented) A computer data signal embodied in a carrier wave, comprising:

a partition of digital data defining a plurality of blocks;

a signature information component extracted from a first one of said blocks and embedded in a second one of said blocks.